



F 621
.W56
Copy 1

LIBRARY OF CONGRESS.

Chap. F 621

Shelf W56

UNITED STATES OF AMERICA.



AMERICAN ASSOCIATION
FOR THE ADVANCEMENT OF SCIENCE.

Appendix to the "Proceedings," August 1873.

SCIENTIFIC EXCURSION

ACROSS THE

STATE OF IOWA,

FROM

DUBUQUE TO SIOUX CITY AND SPRINGVALE.

BY WILLIAM W. WHEILDON.



CONCORD, MASS.

Prepared at the request of the party.

1873.

FG21
.W56

LC 12-30236

APPENDIX.

SCIENTIFIC EXCURSION ACROSS THE STATE OF IOWA. By WILLIAM W. WHEILDON.

AT the conclusion of the sessions of the Association, on Monday, August 26th, and after the return of the members from the social and festive visit to the city of MaGregor, on the Upper Mississippi River, on Tuesday,—which combined river and railroad travel with extraordinary scientific interest,—a more extensive excursion was arranged by the Illinois Central Railroad Company, from Dubuque to Sioux City and return. Such members of the Association as desired to join in the excursion were kindly furnished with the necessary tickets for the purpose, and the “Section”—as we felt that we might call it—left Dubuque on Wednesday morning, the 28th. The Section comprised about forty in number, and included many prominent and active members of the Association, and several ladies who had been attending its meeting. There were five or six State geologists, a number of botanists, and others, all interested in the study of natural history and the pursuits of science.

The excursion proposed was directly across the State of Iowa, from the Mississippi River on the east, to the big Sioux and Missouri Rivers on the west, a distance of three hundred and twenty-seven miles; and many inducements were presented, calculated to make the excursion both interesting and profitable to the party, and promotive in some degree of the cause of science. The meeting of the Association, just concluded, is the first which it has held west of the Mississippi River,—a region embracing by far the largest portion of our country; and the rich valley lying between the two great continental rivers, before they become united into one stream hardly less than that larger region lying beyond the Mis-

souri, was almost wholly unknown, so far as personal observation goes, to the members of the Association. The recent history of this region — and none other is open to us, unless it be to some extent geologically — is to be found scattered through many volumes of more or less value, and in the public documents of the government, which are generally accessible to those who desire to be particularly acquainted with it. The city in which the Association held its sessions is less than a hundred years old, having been settled by the French Canadians in 1786, — then barely entitled to be called an outpost of civilization; and now it numbers a population of more than twenty thousand persons, possessing, as indicative of the taste and intelligence of the people, a museum of natural history and kindred sciences, and a public library. Of course, these simple statements carry with them the evidence of a general advancement in wealth and refinement, — all of which, without needless display of any kind, combined to render this meeting of the Association of the most gratifying character. The attentions bestowed upon the Association and the kindness shown to its members, as well as the large attendance upon its sessions, we feel justified in saying, are regarded as manifesting a high appreciation of its purposes and a respect for its members, alike complimentary to them and not less honorable to the city.

In this excursion the Section was favored with the company of Dr. C. A. White, of the Iowa State University, and State Geologist;* and in order to follow to some extent the rules of the Association, as applied to its working sections, Dr. White was elected chairman; and to him was intrusted not only the general direction of the party, but, we may say, its edification also. Familiar as he is with the geography and the geology of the State, its rivers, lakes, mines, quarries, and prairies, it appeared to be a pleasure to him to give any information in regard to these which might suggest itself to him or be desired by the party; so that, in point of fact, Dr. White *lectured* to his attentive and interested audience during the entire journey of two days across the State, and, as for that matter, nearly all the way back, until we parted with him at Fort Dodge.

* Dr. White's elaborate work on the Geology of the State has been published in two large and elegant volumes, illustrated with maps, diagrams, and drawings; and is a very valuable addition to the works of its character and class.

With the usual occurrences and incidents of travel over this new and peculiar country, so destitute of those features which in New England characterize the landscape, — hills and vales, and forests and rocks, — our stopping-place for the night was at the city of Fort Dodge, on the Des Moines River, 192 miles from Dubuque. We were at this place about a thousand feet above the level of the sea, and 444 feet above the Mississippi River at Keokuk.

Fort Dodge and its neighborhood compose an extremely interesting region, both historically and scientifically. After the transfer of the vast country west of the Mississippi River, included in the Louisiana purchase in 1803, to the United States, one of the military posts for the protection of the surveying parties was established at this point on the Des Moines River, in 1849. The barracks used by the troops, when the region was in possession of the Indians, are still standing within the streets of the present city; and one of the veterans of that period who served under General Mason (Major Williams), and was at one time acting military governor over an almost boundless territory, still resides in the city.

The Section were received by the citizens of Fort Dodge, in a most generous and hospitable manner, into their hearts and homes. In the evening there was a reception at the residence of Mrs. Swain, a member of the Association, at which an opportunity of meeting with some of the citizens of the place was afforded and enjoyed.

The next morning, Thursday, 29th, was devoted to a scientific exploration of the neighborhood, — mine and quarry, forest and river. Carriages were provided by the citizens for all the members of the Section, and some of them accompanied the party in their explorations. Among the places visited were the limestone quarries and kilns, the coal mines, the river, and Lizard Creek; and, chiefest of all, the famous gypsum quarries, known hereabouts as the birthplace of that audacious imposition, the "Cardiff Giant." From among the hills and groves, which undulate and beautify the river banks, we passed over a few miles of elevated prairie ground, and entered the canyon, for it is almost that, in which the gypsum beds are visible in the bluffs upon either side of it. Through this gorge, or narrow valley, runs the Soldier Creek, in its summer glory, babbling or foaming or spreading itself thinly over a smooth sandy surface; and we had to cross it (of course fording it) no less than six times in a hundred rods. It has been running through this

valley, impetuous in its littleness though boisterous at other seasons, for ages, and may undoubtedly be said to have "worked its passage" through the soft gypsum deposits. The stream itself was lovely; and, while its banks were green and beautiful, its companionship was pleasant and inspiring. Stopping in full view, though far above us, of the position whence the Cardiff giant was blocked out, Dr. White interested the Section in a description of the gypsum field, its extent, and the quality and the uses of the article. It has been used to some extent in Fort Dodge as a building material, and arrangements are in progress to furnish a supply of plaster of Paris from it for the purposes of agriculture and the arts. It is not probable that it will be much used for statuary hereafter. The gypsum beds of the Des Moines River and its tributaries are said to be the largest and most valuable in the country, and the only beds of any economical value in this or the adjoining States. Its peculiarity is its remarkable purity and freedom from grit, so that it is hewn with axes and hatchets, sawed with a common wood-saw, and blasting-holes, when necessary, are made with a common carpenter's anger; yet as a building material, though it may be cut and defaced with a penknife, it retains its beauty of coloring and its durability nearly as well as marble. It may be sawed into slabs or blocks of any size; and, when calcined and ground as plaster of Paris, it is applicable to the highest purposes of art, as well as to ordinary agriculture.

Returning from the gypsum quarries, we crossed the Des Moines River, and from the bluffs of its western shore obtained some fine views of the city, the river, and the surrounding country. Our visit proved to be highly satisfactory, socially and scientifically, not only to the members of the Section, but not less so to the citizens of Fort Dodge, and will be pleasantly remembered by all.

At 3.40 P.M., we left our friends at Fort Dodge, and in a car kindly provided for our party, proceeded on our way to Sioux City. Our route for the whole distance of one hundred and thirty-five miles was over the open and apparently boundless prairie, unbroken by an elevation and almost unrelieved by tree or shrub, save the rank weeds of the prairie. The weather was warm and pleasant, and particularly favorable for the most extended views over the prairie, which, especially towards the north, seemed like the open ocean; and visions of the broad swell of the sea scarcely required an effort of the imagination. For a distance of more than fifty miles, the track of the railroad was as straight as an arrow; and, looking

back from the rear of the train, a very slight grade, hardly more than the curvature of the earth, we might imagine, could be observed. The prairie was not entirely new to the party, excepting in its apparent boundlessness; but it still seemed strange to those in whose minds "the idea of a wilderness was indissolubly connected with that of a forest." Beyond the Ohio River, "the traveller, as he wanders successively over Indiana, Illinois, Missouri, and the vast wilderness lying beyond, is astonished at the immensity of the great plain, the verdure, the beauty, of its widespread meadows." In our case nothing could be more interesting than the broad prairie views, opening from all the windows of the car, during a ride of more than a hundred miles, which may scarcely be said to be diversified with a few trees, and a few houses, a river or two, a lake or two, and for most of the time the visible horizon bounding the landscape. Many times as we have seen them, lived upon them, studied them, we never look upon these boundless prairies without wonder at their vast extent, their marvellous fertility, their beautiful green covering, brilliant with flowers and instinct with life in so many forms.

Notwithstanding the apparently level country over which we had travelled for two days, we had risen to an altitude of more than fifteen hundred feet above the sea, and had as imperceptibly dropped down again to two-thirds of that elevation. The summit level in our journey was passed near Storm Lake, — a spot made memorable with blood in Indian history, and whose peculiarity is that its waters flow from opposite ends into different streams.

After a very agreeable and interesting journey during the afternoon, our Section reached its destination and western limit, at 10.15 p.m., unexpectedly, as we were surprised to learn, to the citizens. We had passed since leaving Dubuque, in the three hundred and twenty-seven miles over this comparatively new country, more than forty stations, each of which of course represents the town, and frequently constitutes all there is of a settlement. It seems that we were expected at four o'clock in the afternoon, at which hour a public reception had been arranged, carriages provided for the use of the party, and there would also have been a gathering in the evening; all of which, with whatever benefits might have occurred, were lost to us and to them by our delay. We found ample and elegant accommodations at the Hubbard House, — a large and princely hotel, — and received the visits of some of the prominent citizens during the evening.

Our chairman, Dr. White, in consultation with the citizens, made the necessary arrangements for the movements of the party for the following day.

Friday, August 30. — This morning after breakfast, the Section assembled in the drawing-rooms prepared for the excursions of the day. Carriages were placed at their disposal, and Dr. White organized the companies and arranged the excursions. Parties sallied out in different directions around the city, and the whole neighborhood was visited. The Big Sioux River was crossed into the territory of Dakota, and the Missouri River, at a point below, into Nebraska; and short rides were taken in each, chiefly of interest to the botanists of the party. The celebrated bluff named after the first settler of the city, Brughier, was visited, and from this point was seen the junction of the Sioux River with the Missouri. The geologists had ample and enjoyable opportunities of visiting the cretaceous formations of this region, and numerous specimens were obtained by them. Quite a number of specimens of small fishes were also obtained from the river by our ichthyologists, and not a few moths and bugs. Floyd's River was crossed, and the bluff three miles below the city, where Floyd was buried at the time of Lewis and Clarke's expedition, was seen, but not visited. Some of the highest eminences in the State are to be found a few miles north of this city, on the Sioux River, 1500 feet above the level of the sea; and from these the views are picturesque and beautiful, including innumerable bluffs in all directions, groves of trees, the courses of the two rivers, and the great level valley lying between them.

The region around Sioux City was found to be very interesting, historically, geologically, and geographically; and much pleasure and profound scientific interest were enjoyed by the party, especially that portion of it which had the privilege of listening to the instructive remarks and explanations of Dr. White. It is hardly too much to say that the bluffs, rivers, forests, quarries, and even the swamps in the neighborhood of the city, were visited by the geologists, botanists, ichthyologists, and bug-hunters of the party; and wherever there was fine scenery to be found, upon the bluffs and along the rivers, there some of our æsthetic members were sure to be seen.

In the evening, after the excursions of the day, the Section re-assembled in the drawing-rooms of the Hubbard House, compared notes of the day's exploits, and received the calls of many of the

citizens with their ladies. At an early hour, the company was called to order by the chairman, Dr. White, and committees appointed to prepare resolutions, expressive of the sense of the company, for the invitation extended to them by the railroad company and the attentions received from the citizens of Sioux City. Subsequently, Prof. Perry, from the first named committee, reported the following:—

Whereas, The Illinois Central Railroad Company has kindly favored such members of the American Association for the Advancement of Science as wished to make an excursion westward with free tickets from Dubuque to Sioux City, and back again; therefore,

Resolved, That we tender our most hearty thanks to the said railroad company, and in particular to the General Superintendent and to G. N. Candee, Esq., for their kind and untiring efforts to promote our comfort and pleasure during the excursion.

Mr. W. W. Wheildon, from the second committee on the reception and entertainment at Sioux City, reported the following resolutions, and all were unanimously adopted by the meeting and published in the local papers:—

Resolved, That the thanks of the Section, individually and collectively, be presented to the citizens of Sioux City for the attention and kindness bestowed on the occasion of our visit to this city and its interesting vicinity; and, further,

Resolved, That, recognizing their generous conduct as an evidence of interest in the cause of science on the part of the citizens of Sioux City, it is especially grateful to us, and will be regarded as an encouragement in future efforts for the advancement of science in this and all sections of the country.

After completing the business, the remainder of the evening was passed in very agreeable social intercourse with the citizens and ladies of the place, all of whom expressed their gratification at the visit of so large and respectable a body of scientists, and that the Association had honored the State by holding its first meeting west of the Mississippi within its limits.

THE RETURN.

Saturday, August 31. — Having accomplished, as far as seemed practicable, the objects of the visit to Sioux City, this morning the members of the Section took the cars on their return. Passing again over the beautiful prairie, they reached Fort Dodge at noon, and were welcomed by their friends and invited to a dinner provided by the ladies of the city. The repast was served at the Fort Dodge House, and a number of ladies and gentlemen belonging to the city were present. At the conclusion of the dinner a vote of thanks for the kindness and attentions received was adopted; and much mutual good feeling was expressed at parting.

VISIT TO SPRINGVALE.

A number of our party, having accepted the invitation of Rev. S. H. Taft, President of the Board of Trustees of Humboldt College, at Springvale, tendered in behalf of the citizens, carriages were now in readiness to convey them to that place. Humboldt College is the latest educational institution of its class in the State, as Springvale is also one of its youngest municipalities. The town lies about sixteen miles north of Fort Dodge, and nearly at the point of junction of the east and west branches of the Des Moines River. The ride across the intervening country in the afternoon, quite in contrast with our extensive railroad journeyings, was a perfect pleasure.

We were received at Springvale with warm hearts and every expression of welcome, in the homes of the people; and in the evening there was a public reception at "Russell Hall," with the somewhat remarkable addition, as we thought, of a musical band. We thought perhaps the influence of "the Jubilee" had been felt even in these remote settlements. The exercises of the evening consisted of an address of welcome by Rev. Mr. Taft and remarks by Dr. White, Prof. Perry, Mr. Putnam, and Mr. Wheildon. The hall was filled to its utmost capacity, the people were very much interested, and the band furnished excellent music for the occasion. Later in the evening the band tendered a serenade to their visitors, and nothing was omitted to render the occasion pleasant and agreeable.

By arrangement of the two religious societies in the town, Prof.

Perry, on the following day and evening, delivered his two discourses on the Mosaic Creation and the Noachian Flood, in Russell Hall, to very crowded assemblies. They were particularly interesting and instructive, and gave great satisfaction. One of the clergymen announced his intention of preaching upon the subjects presented to the consideration of the people by the scientists on the next Sabbath.

On Monday, the scientists visited Humboldt College and other points of interest in the neighborhood; and in the evening the people assembled again to hear a lecture by Mr. Putnam, of Salem, on Fishes, and this gentleman presented his subject in a popular and interesting manner, illustrating the discourse with living specimens taken from the river in the vicinity.

On Tuesday, the party visited the oolite quarries and lime kilns, the point of land in Dakota City where the two branches of the river form a junction, and the admirable grounds belonging to the college. In the evening a lecture was delivered by Mr. Wheildon, on the Origin of the Races of Men, supporting the Bible account of the creation of man, controverting the idea of numerous creations, and expressing some views adverse to the Darwinian speculations. As on the previous evenings, the hall was crowded, many of the auditors coming considerable distances. At the conclusion of his discourse, Mr. Wheildon read a vote of the scientists expressing their thanks for the kindness and hospitality received; and the meeting passed a vote of thanks to the lecturer.

Here, it may be said, the public proceedings of our party closed. Many of the members had already left Springvale, and on Wednesday morning, September 4th, the remainder returned to Fort Dodge and took the cars for Dubuque; and there the excursion ended, each day having been passed happily and pleasantly. We had crossed and re-crossed the State, had visited many localities of historical and geological interest, had seen the beauty of the scenery and the richness of the soil, and measured, as far as the eye could reach, the almost boundless and beautiful prairies. This State, and perhaps all the States east of the Rocky Mountains, which are drained by the Missouri and Mississippi Rivers and their tributaries, are of similar geological character, composed for the most part of stratified rocks and drift. The rocks are altogether of marine origin, and are filled with remains of shells, corals, &c., as the coal fields are with vegetable remains. Minerals of various kinds, especially galena in the neighborhood of Dubuque, are found

in different parts of the State, and more or less in all the prairie States, but of course not as in the mountainous regions farther west. Although the rocks must have been deposited in horizontal layers, they are rarely found anywhere in this condition, so that not only the coal deposits, but nearly all other formations, crop out at the surface or are exposed in the river valleys. The advantages afforded by these conditions are especially favorable to geological observation and promotive of the progress of the science, as the relative position of these formations and the peculiar fossil remains which characterize them, accurately determined, are essential to the claims of geology as a science. American geology is already recognized abroad; and the labors of American geologists, in their ample and open fields, have contributed, and are now contributing largely to the advancement of the science.

The excursion of the Section, formed impromptu and almost without previous acquaintance among its members, and the attentions received at Fort Dodge, Sioux City, and Springvale, various and generous and inspiring as these were, will be long remembered and cherished as among the pleasantest experiences of their lives. The whole excursion was enjoyed, not merely in its scientific pursuits, satisfactory as these were, but quite as much in its social activities and intercourse. These grew upon the party, both ladies and gentlemen, daily, and made the termination of our journeyings an undesired consummation. Of the same character, to some extent, were the friendships formed in the cities visited, where the kindnesses received seemed to teach us not only that —

“One touch of nature makes the whole world kin,”

but that we were of one country and one people.

But to these words of pleasure, recreation, and friendship, — so fully realized by all the members of the party, — the word of sadness must be added. We felt that the social enjoyments of our party must terminate, that many of us might not meet again; but we did not dream, when we separated, that one who had taken so active a part in the doings of the Association and of the Section during the excursion, as Prof. J. E. PERRY, — whom we all hoped to meet again, — would be removed from his sphere of labor and usefulness, and called up higher, even before all our party had reached their homes. Although he did not appear to be as strong in health as we could have wished, he shrunk from no effort; and we fear that the readiness with which he complied with the

wishes of others may have tasked his energies of mind and body too severely.

Prof. Perry had interested all our members in the learned and elaborate discourses delivered by him at Dubuque and repeated at Springvale, and we had enjoyed his conversation and companionship during the whole excursion. His quiet and gentlemanly bearing had attracted the observation and secured the respect of all the party, and we may truly say that none more sincerely than they mourn his early and sudden death.

In concluding this narrative of the longest and, in some respects, most practical excursion yet made by the members of our Association, we may be permitted to express the opinion that, whether it shall ever be repeated in any other direction or not, much good in the cause of science and scientific observation cannot fail to result from this, in the new and comparatively unexplored region visited. The people everywhere manifested the most lively and gratifying interest in the subjects of scientific inquiry, as the whole community appeared to do at Dubuque, and left no means unemployed to assist the members of the Section in the pursuit of their peculiar studies. Not only was a spirit of hospitality and friendliness invoked in our aid, but, as in the city where our meeting had been held, a desire was manifested by many to continue the investigations and observations initiated by their visitors, and follow in the paths of study in some small degree opened to their enlightened apprehension. "The pursuits of science," says Dr. Dick, "are fitted to yield a positive gratification to every human mind. It presents to view processes, combinations, metamorphoses, motions, and objects of various description calculated to arrest the attention and to astonish the mind far more than all the romances and tales of wonder that were ever invented by the human imagination. In order to make science advance with accelerated steps, and to multiply sources of mental enjoyment, we have only to set the machinery of the human mind in motion, and to direct its movements to those objects which are congenial to its native dignity and its high distinction."

In the true spirit of our Association,—the advancement of science,—we entered upon this excursion; and those who have enjoyed its pleasures are encouraged in the belief that it has not failed to leave pleasant remembrances in its paths, and perchance sown some seed that may hereafter give evidence of the hopes that inspired it.

AMERICAN ASSOCIATION
FOR THE ADVANCEMENT OF SCIENCE.

Appendix to the "Proceedings," August 1872.

SCIENTIFIC EXCURSION

ACROSS THE

STATE OF IOWA,

FROM

DUBUQUE TO SIOUX CITY AND SPRINGVALE

BY WILLIAM W. WHEELDON.



CONCORD, MASS.

Prepared at the request of the party.

1873.





LIBRARY OF CONGRESS



0 016 093 911 4 ●